AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A method for providing a cut grade for a gemstone comprising ~~the steps of~~:

illuminating a gemstone model with a modeled light source from infinite distance;

evaluating the fire of the gemstone model using a metric.

2. (Currently Amended) The method of Claim 1 further comprising ~~the steps of~~ refracting light elements through the gemstone model.

3. (Currently Amended) The method of Claim 2, wherein the ~~step of~~ evaluating of fire uses ~~using~~ a metric that considers the total number of light elements, the length distribution of light elements and the angular distribution of the light elements for the gemstone model.

4. (Currently Amended) The method of Claim 3 wherein the ~~step of~~ evaluating of fire using said metric further comprises ~~the step of~~ setting a power density threshold for said light elements.

5. (Currently Amended) A method for providing a cut grade for a gemstone comprising ~~the steps of~~:

illuminating a gemstone model with a point light source at infinite distance;

refracting light elements, originating from the point light source, through the gemstone model;

evaluating the fire of the gemstone model using a metric.

6. (Currently Amended) The method of claim 5, further comprising ~~the step of~~ evaluating the fire of the gemstone comprises ~~the step of~~ recording light elements that

appear to refract out of the crown of the gemstone model from the perspective of a hemispherical observer.

7. (Original) The method of claim 6, wherein said hemispherical observer is at an infinite distance from the gemstone model.

8. (Currently Amended) The method of claim 5, wherein ~~the step of~~ evaluating fire includes a calculation of DCLR.

9. (Original) The method of claim 8 wherein DCLR is the sum (over wavelength of the light elements)of the sum (over the number of light elements)of the differential area of each light element that exceeds a power density threshold criterion, multiplied by an exit angle weighting factor.

10. (Original) The method of claim 9, wherein said exit angle weighting factor is the square of the cosine of the exit angle.

11. (Original) The method of claim 9, wherein the sum of the number of light elements only counts refracted light elements that exceed a power density threshold based on the color sensitivity of the human eye.

12. (Original) The method of claim 9 wherein the power density threshold cutoff for a refracted light element is approximately 1% of the power density of the brightest light element.

13. (Original) The method of claim 9 wherein the power density threshold cutoff for a refracted light element is approximately .1% of the power density of the brightest light element.

14. (Original) The method of claim 9 wherein the power density threshold cutoff for a refracted light element is approximately .01% of the power density of the brightest light element.

15. (Currently Amended) A method for providing a cut grade for a gemstone comprising ~~the steps of~~:

analyzing cut proportions of a gemstone;

comparing the cut proportions of the gemstone with a list of proportion grades that depend, at least in part, on a calculation of dispersed color light return;

providing a grade for the gemstone based on said list of proportion grades.

16. (Original) The method of claim 15, wherein the grade provided incorporates an evaluation of gemstone symmetry.

17. (Original) The method of claim 15, wherein the grade provided incorporates an evaluation of polish

18. (Original) The method of claim 15, wherein the grade provided incorporates an evaluation of gemstone color.

19. (Original) The method of claim 15, wherein the grade provided incorporates an evaluation of fluorescence.

20. (Original) The method of claim 15, wherein the grade provided incorporates an evaluation of gemstone inclusions.

21. (Original) The method of claim 15, wherein the grade provided incorporates an evaluation of gemstone strain.

22. (Original) The method of claim 15, wherein the grade provided incorporates an evaluation of gemstone girdle condition.

23. (Original) The method of claim 15, wherein the grade combines an evaluation of fire and scintillation.

24. (Original) The method of claim 15, wherein the grade combines an evaluation of fire, brilliance and scintillation.

25. (Original) The method of claim 15, wherein the grade is a fire grade.

26. (Currently Amended) A method of creating a diamond grading report comprising ~~the steps of~~:

evaluating the cut proportion of a diamond;

listing the cut proportions of the diamond on a diamond grading report;

comparing said cut proportions to a list of proportion grades that depend, at least in part, on a calculation of dispersed color light return;

inserting a digital image of a virtual diamond into the report, wherein said image is based, at least in part, on said list of proportion grades.

27. (Currently Amended) A method of creating a diamond grading report comprising ~~the steps of~~:

evaluating the cut proportion of a diamond;

listing the cut proportions of the diamond on a diamond grading report;

comparing said cut proportions to a list of proportion grades that depend, at least in part, on a calculation of dispersed color light return;

providing a ~~numerical~~ grade of said diamond in the report, wherein said ~~numerical~~ grade is based, at least in part, on said list of proportion grades.

28. (Currently Amended) A method of providing target proportions for cutting a diamond comprising ~~the steps of~~:

determining the size of an uncut gemstone;

comparing a list of possible cut proportions of the gemstone with a list of proportion grades that depend, at least in part, on a calculation of dispersed color light return;

providing a target proportion for the gemstone based on said list of proportion grades.

29. (Currently Amended) A method of cutting a diamond comprising ~~the steps of~~:

determining the size of an uncut diamond;

determining a possible cut proportion for the diamond;

comparing said possible cut proportion with a list of proportion grades that depend, at

least in part, on a calculation of dispersed color light return;

cutting the uncut diamond.

30. (Currently Amended) A method for providing a cut grade for a gemstone comprising ~~the steps of~~:

analyzing cut proportions of a gemstone;

comparing the cut proportions of the gemstone with a list of proportion grades that depend, at least in part, on culet size;

providing a grade for gemstone fire based on said list of proportion grades.

31. (Currently Amended) A method for providing a cut grade for a gemstone comprising ~~the steps of~~:

analyzing cut proportions of a gemstone;

comparing the cut proportions of the gemstone with a list of proportion grades that depend, at least in part, on table size;

providing a grade for gemstone fire based on said list of proportion grades.

32. (Currently Amended) A method for providing a cut grade for a gemstone comprising ~~the steps of~~:

analyzing cut proportions of a gemstone;

comparing the cut proportions of the gemstone with a list of proportion grades that depend, at least in part, on crown angle;

providing a grade for gemstone fire based on said list of proportion grades.

33. (Currently Amended) A method for providing a cut grade for a gemstone comprising ~~the steps of~~:

analyzing cut proportions of a gemstone;

comparing the cut proportions of the gemstone with a list of proportion grades that depend, at least in part, on pavilion angle;

providing a grade for gemstone fire based on said list of proportion grades.

34. (Currently Amended) A method for providing a cut grade for a gemstone comprising ~~the steps of~~:

analyzing cut proportions of a gemstone;

comparing the cut proportions of the gemstone with a list of proportion grades that depend, at least in part, on the number of girdle facets;

providing a grade for gemstone fire based on said list of proportion grades.

35. (Currently Amended) A method for providing a cut grade for a gemstone comprising ~~the steps of~~:

analyzing cut proportions of a gemstone;

comparing the cut proportions of the gemstone with a list of proportion grades that depend, at least in part, on girdle thickness;

providing a grade for gemstone fire based on said list of proportion grades.

36. (Currently Amended) A method for providing a cut grade for a gemstone comprising ~~the steps of~~:

analyzing cut proportions of a gemstone;

comparing the cut proportions of the gemstone with a list of proportion grades that depend, at least in part, on star facet length.

providing a grade for gemstone fire based on said list of proportion grades.

37. (Currently Amended) A method for providing a cut grade for a gemstone comprising ~~the steps of~~:

analyzing cut proportions of a gemstone;

comparing the cut proportions of the gemstone with a list of proportion grades that depend, at least in part, on lower girdle length;

providing a grade for gemstone fire based on said list of proportion grades.

38. (Currently Amended) A method of creating a diamond grading report comprising ~~the steps of~~:

evaluating the cut proportion of a diamond;

listing the cut proportions of the diamond on a diamond grading report;

comparing said cut proportions to a list of proportion grades that comprise an evaluation of diamond fire and depend, at least in part, on table size;

providing a ~~numerical~~ grade of said diamond in the report, wherein said ~~numerical~~ grade is based, at least in part, on said list of proportion grades.

39. (Currently Amended) The method of claim 38, wherein said ~~numerical~~ grade is a fire grade.

40. (Currently Amended) A method of creating a diamond grading report comprising ~~the steps of~~:

evaluating the cut proportion of a diamond;

listing the cut proportions of the diamond on a diamond grading report;

comparing said cut proportions to a list of proportion grades that comprise an evaluation of diamond fire and depend, at least in part, on crown angle;

providing a ~~numerical~~ grade of said diamond in the report, wherein said ~~numerical~~ grade is based, at least in part, on said list of proportion grades.

41. (Currently Amended) The method of claim 40, wherein said ~~numerical~~ grade is a fire grade.

42. (Currently Amended) A method of creating a diamond grading report comprising ~~the steps of~~:

evaluating the cut proportion of a diamond;

listing the cut proportions of the diamond on a diamond grading report;

comparing said cut proportions to a list of proportion grades that comprise an evaluation of diamond fire and depend, at least in part, on pavilion angle;

providing a ~~numerical~~ grade of said diamond in the report, wherein said ~~numerical~~ grade is based, at least in part, on said list of proportion grades.

43. (Currently Amended) The method of claim 42, wherein said ~~numerical~~ grade is a fire grade.

44. (Currently Amended) A method of creating a diamond grading report comprising ~~the steps of~~:

evaluating the cut proportion of a diamond;

listing the cut proportions of the diamond on a diamond grading report;

comparing said cut proportions to a list of proportion grades that comprise an evaluation of diamond fire and depend, at least in part, on the number of girdle facets;

providing a ~~numerical~~ grade of said diamond in the report, wherein said ~~numerical~~ grade is based, at least in part, on said list of proportion grades.

45. (Currently Amended) The method of claim 44, wherein said ~~numerical~~ grade is a fire grade.

46. (Currently Amended) A method of creating a diamond grading report comprising ~~the steps of~~:

evaluating the cut proportion of a diamond;

listing the cut proportions of the diamond on a diamond grading report;

comparing said cut proportions to a list of proportion grades that comprise an evaluation of diamond fire and depend, at least in part, on girdle thickness;

providing a ~~numerical~~ grade of said diamond in the report, wherein said ~~numerical~~ grade is based, at least in part, on said list of proportion grades.

47. (Currently Amended) The method of claim 46, wherein said ~~numerical~~ grade is a fire grade.

48. (Currently Amended) A method of creating a diamond grading report comprising ~~the steps of~~:

evaluating the cut proportion of a diamond;

listing the cut proportions of the diamond on a diamond grading report;

comparing said cut proportions to a list of proportion grades that comprise an evaluation of diamond fire and depend, at least in part, on star facet length;

providing a ~~numerical~~ grade of said diamond in the report, wherein said ~~numerical~~ grade is based, at least in part, on said list of proportion grades.

49. (Currently Amended) The method of claim 48, wherein said ~~numerical~~ grade is a fire grade.

50. (Currently Amended) A method of creating a diamond grading report comprising ~~the steps of~~:

evaluating the cut proportion of a diamond;

listing the cut proportions of the diamond on a diamond grading report;

comparing said cut proportions to a list of proportion grades that comprise an evaluation of diamond fire and depend, at least in part, on lower girdle length;

providing a ~~numerical~~ grade of said diamond in the report, wherein said ~~numerical~~ grade is based, at least in part, on said list of proportion grades.

51. (Currently Amended) The method of claim 50, wherein said ~~numerical~~ grade is a fire grade.

52. (Currently Amended) A method of creating a diamond grading report comprising ~~the steps of~~:

evaluating the cut proportion of a diamond;

listing the cut proportions of the diamond on a diamond grading report;

comparing said cut proportions to a list of proportion grades that comprise an evaluation of diamond fire and depend, at least in part, on culet size;

providing a ~~numerical~~ grade of said diamond in the report, wherein said ~~numerical~~ grade is based, at least in part, on said list of proportion grades.

53. (Currently Amended) The method of claim 52, wherein said ~~numerical~~ grade is a fire grade.

54. (Original) A system for providing a cut grade for a gemstone comprising:

means for illuminating a gemstone model with a modeled light source from infinite distance; and

means for evaluating the fire of the gemstone model using a metric.

55. (Currently Amended) The system of Claim 54 further comprising ~~a~~ means for refracting light elements through the gemstone model.

56. (Original) The system of Claim 55, wherein the means for evaluating fire uses a metric that considers the total number of light elements, the length distribution of light elements and the angular distribution of the light elements for the gemstone model.

57. (Original) The system of Claim 56 wherein the means for evaluating fire using said metric further comprises the step of setting a power density threshold for said light elements.

58. (Currently Amended) A system for providing a cut grade for a gemstone comprising:

~~a~~ means for illuminating a gemstone model with a point light source at infinite distance; ~~a~~ means for refracting light elements, originating from the point light source, through the gemstone model; and

~~a~~ means for evaluating the fire of the gemstone model using a metric.

59. (Currently Amended) The system of claim 56, wherein the means for evaluating the fire of a gemstone comprises a means for recording light elements that appear to refract out of the crown of the gemstone model from the perspective of a hemispherical observer.

60. (Original) The system of claim 57, wherein said hemispherical observer is at an infinite distance from the gemstone model.

61. (Currently Amended) The system of claim 56, wherein the means for evaluating fire includes a means for calculation of DCLR.

62. (Original) The system of claim 59 wherein DCLR is the sum (over wavelength of the light elements)of the sum (over the number of light elements)of the differential area of each light element that exceeds a power density threshold criterion, multiplied by an exit angle weighting factor.

63. (Original) The system of claim 60, wherein said exit angle weighting factor is the square of the cosine of the exit angle.

64. (Original) The system of claim 60, wherein the sum of the number of light element traces only counts light elements that exceed a power density threshold based on the color sensitivity of the human eye.

65. (Original) The system of claim 60 wherein the power density threshold cutoff for a refracted light element is approximately 1% of the power density of the brightest light element.

66. (Original) The system of claim 60 wherein the power density threshold cutoff for a refracted light element is approximately .1% of the power density of the brightest light element.

67. (Original) The system of claim 66 wherein the power density threshold cutoff for a refracted light element is approximately .01% of the power density of the brightest light element.

68. (Currently Amended) A system for providing a cut grade for a gemstone comprising the steps of:

a means for analyzing cut proportions of a gemstone;

a means for comparing the cut proportions of the gemstone with a list of proportion

grades that depend, at least in part, on a calculation of dispersed color light return;

a means for providing a grade for the gemstone based on said list of proportion grades.

69. (Currently Amended) The system of claim 66, wherein the means for providing a grade comprises a means for evaluating gemstone symmetry.

70. (Currently Amended) The system of claim 66, wherein the means for providing a grade comprises a means for evaluating polish

71. (Currently Amended) The system of claim 66, wherein the means for providing a grade comprises a means for evaluating gemstone color.

72. (Currently Amended) The system of claim 66, wherein the means for providing a grade comprises a means for evaluating fluorescence.

73. (Currently Amended) The system of claim 66, wherein the means for providing a grade comprises a means for evaluating gemstone inclusions.

74. (Currently Amended) The system of claim 66, wherein the means for providing a grade comprises a means for evaluating gemstone strain.

75. (Currently Amended) The system of claim 66, wherein the means for providing a grade comprises a means for evaluating girdle condition.

76. (Currently Amended) The system of claim 66, wherein the means for providing a grade comprises a means for evaluating fire and scintillation.

77. (Currently Amended) The system of claim 66, wherein the means for providing a grade comprises ~~a~~ means for evaluating fire, brilliance and scintillation.

78. (Currently Amended) The system of claim 66, wherein the means for providing a grade comprises ~~a~~ means for providing a fire grade.

79. (Currently Amended) A system of creating a diamond grading report comprising:

~~a~~ means for evaluating the cut proportion of a diamond;

~~a~~ means for listing of cut proportions of the diamond on a diamond grading report;

~~a~~ means for comparing said cut proportions to a list of proportion grades that depend, at least in part, on a calculation of dispersed color light return;

~~a~~ means for inserting a digital image of a virtual diamond into the report, wherein said image is based, at least in part, on said list of proportion grades.

80. (Currently Amended) A system for creating a diamond grading report comprising:

~~a~~ means for evaluating the cut proportion of a diamond;

~~a~~ means for listing the cut proportions of the diamond on a diamond grading report;

~~a~~ means for comparing said cut proportions to a list of proportion grades that depend, at least in part, on a calculation of dispersed color light return;

~~a~~ means for providing a ~~numerical~~ grade of said diamond in the report, wherein said ~~numerical~~ grade is based, at least in part, on said list of proportion grades.

81. (Currently Amended) A system for providing target proportions for cutting a diamond comprising:

~~a~~ means for comparing a list of possible cut proportions of ~~bf~~ the gemstone with a list of proportion grades that depend, at least in part, on a calculation of dispersed color light return;

a means, incorporating a processor, for providing a target proportion for the gemstone based on said list of proportion grades.

82. (Currently Amended) A system for cutting a diamond comprising:

a means for determining a possible cut proportion for the diamond;

a means for comparing said possible cut proportion with a list of proportion grades that depend, at least in part, on a calculation of dispersed color light return.

83. (Currently Amended) A system for providing a cut grade for a gemstone comprising:

a means for analyzing cut proportions of a gemstone;

a means for comparing the cut proportions of the gemstone with a list of proportion

grades that depend, at least in part, on culet size;

a means for providing a grade for gemstone fire based on said list of proportion grades.

84. (Currently Amended) A system for providing a cut grade for a gemstone comprising ~~the steps of~~:

a means for analyzing cut proportions of a gemstone;

a means for comparing the cut proportions of the gemstone with a list of proportion grades that depend, at least in part, on table size;

a means for providing a grade for gemstone fire based on said list of proportion grades.

85. (Original) A system for providing a cut grade for a gemstone comprising:

means for analyzing cut proportions of a gemstone;

means for comparing the cut proportions of the gemstone with a list of proportion grades that depend, at least in part, on crown angle;

means for providing a grade for gemstone fire based on said list of proportion grades.

86. (Original) A system for providing a cut grade for a gemstone comprising:

means for analyzing cut proportions of a gemstone;

means for comparing the cut proportions of the gemstone with a list of proportion grades that depend, at least in part, on pavilion angle;

means for providing a grade for gemstone fire based on said list of proportion grades.

87. (Original) A system for providing a cut grade for a gemstone comprising:

means for analyzing cut proportions of a gemstone;

means for comparing the cut proportions of the gemstone with a list of proportion grades that depend, at least in part, on the number of girdle facets;

means for providing a grade for gemstone fire based on said list of proportion grades.

88. (Original) A system for providing a cut grade for a gemstone comprising:

means for analyzing cut proportions of a gemstone;

means for comparing the cut proportions of the gemstone with a list of proportion grades that depend, at least in part, on girdle thickness;

means for providing a grade for gemstone fire based on said list of proportion grades.

89. (Original) A system for providing a cut grade for a gemstone comprising:

means for analyzing cut proportions of a gemstone;

means for comparing the cut proportions of the gemstone with a list of proportion grades that depend, at least in part, on star facet length.

means for providing a grade for gemstone fire based on said list of proportion grades.

90. (Original) A system for providing a cut grade for a gemstone comprising:

means for analyzing cut proportions of a gemstone;

means for comparing the cut proportions of the gemstone with a list of proportion grades that depend, at least in part, on lower girdle length;

means for providing a grade for gemstone fire based on said list of proportion grades.

91. (Currently Amended) A system for creating a diamond grading report comprising:

a means for listing cut proportions of the diamond on a diamond grading report;

a means for comparing said cut proportions to a list of proportion grades that comprise an evaluation of diamond fire and depend, at least in part, on table size;

a means for providing a ~~numerical~~ grade of said diamond in the report, wherein said ~~numerical~~ grade is based, at least in part, on said list of proportion grades.

92. (Currently Amended) The system of claim 63, wherein said ~~numerical~~ grade is a fire grade.

93. (Currently Amended) A system for creating a diamond grading report comprising:

means for evaluating the cut proportion of a diamond;

means for listing the cut proportions of the diamond on a diamond grading report;

means for comparing said cut proportions to a list of proportion grades that comprise an evaluation of diamond fire and depend, at least in part, on crown angle;

means for providing a ~~numerical~~ grade of said diamond in the report, wherein said ~~numerical~~ grade is based, at least in part, on said list of proportion grades.

94. (Currently Amended) The system of claim 93, wherein said ~~numerical~~ grade is a fire grade.

95. (Currently Amended) A system for creating a diamond grading report comprising:

means for evaluating the cut proportion of a diamond;

means for listing the cut proportions of the diamond on a diamond grading report;

means for comparing said cut proportions to a list of proportion grades that comprise an evaluation of diamond fire and depend, at least in part, on pavilion angle;

means for providing a ~~numerical~~ grade of said diamond in the report, wherein said ~~numerical~~ grade is based, at least in part, on said list of proportion grades.

96. (Currently Amended) The system of claim 95, wherein said ~~numerical~~ grade is a fire grade.

97. (Currently Amended) A system for creating a diamond grading report comprising:

means for evaluating the cut proportion of a diamond;

means for listing the cut proportions of the diamond on a diamond grading report;

means for comparing said cut proportions to a list of proportion grades that comprise an evaluation of diamond fire and depend, at least in part, on the number of girdle facets;

means for providing a ~~numerical~~ grade of said diamond in the report, wherein said ~~numerical~~ grade is based, at least in part, on said list of proportion grades.

98. (Currently Amended) The system of claim 97, wherein said ~~numerical~~ grade is a fire grade.

99. (Currently Amended) A system for creating a diamond grading report comprising:

means for evaluating the cut proportion of a diamond;

means for listing the cut proportions of the diamond on a diamond grading report;

means for comparing said cut proportions to a list of proportion grades that comprise an evaluation of diamond fire and depend, at least in part, on girdle thickness;

means for providing a ~~numerical~~ grade of said diamond in the report, wherein said ~~numerical~~ grade is based, at least in part, on said list of proportion grades.

100. (Currently Amended) The system of claim 99, wherein said ~~numerical~~ grade is a fire grade.

101. (Currently Amended) A system for creating a diamond grading report comprising:

means for evaluating the cut proportion of a diamond;

means for listing the cut proportions of the diamond on a diamond grading report;

means for comparing said cut proportions to a list of proportion grades that comprise an evaluation of diamond fire and depend, at least in part, on star facet length;

means for providing a ~~numerical~~ grade of said diamond in the report, wherein said ~~numerical~~ grade is based, at least in part, on said list of proportion grades.

102. (Currently Amended) The system of claim 101, wherein said ~~numerical~~ grade is a fire grade.

103. (Currently Amended) A system for creating a diamond grading report comprising:

means for evaluating the cut proportion of a diamond;

means for listing the cut proportions of the diamond on a diamond grading report;

means for comparing said cut proportions to a list of proportion grades that comprise an evaluation of diamond tire and depend, at least in part, on lower girdle length;

means for providing a ~~numerical~~ grade of said diamond in the report, wherein said ~~numerical~~ grade is based, at least in part, on said list of proportion grades.

104. (Currently Amended) The system of claim 103, wherein said ~~numerical~~ grade is a fire grade.

105. (Currently Amended) A system for creating a diamond grading report comprising:

means for evaluating the cut proportion of a diamond;

means for listing the cut proportions of the diamond on a diamond grading report;

means for comparing said cut proportions to a list of proportion grades that comprise an evaluation of diamond fire and depend, at least in part, on culet size;

means for providing a ~~numerical~~ grade of said diamond in the report, wherein said ~~numerical~~ grade is based, at least in part, on said list of proportion grades.

106. (Currently Amended) The system of claim 105, wherein said ~~numerical~~ grade is a fire grade.

107. (Currently Amended) A system for creating a diamond grading report comprising:

means for evaluating the cut proportion of a diamond;

means for listing the cut proportions of the diamond on a diamond grading report;

means for comparing said cut proportions to a list of proportion grades that comprise an evaluation of diamond fire and depend, at least in part, on crown height;

means for providing a ~~numerical~~ grade of said diamond in the report, wherein said ~~numerical~~ grade is based, at least in part, on said list of proportion grades.

108. (Currently Amended) The system of claim 107, wherein said ~~numerical~~ grade is a fire grade.

109. (Currently Amended) A system for creating a diamond grading report comprising:

means for evaluating the cut proportion of a diamond;

means for listing the cut proportions of the diamond on a diamond grading report;

means for comparing said cut proportions to a list of proportion grades that comprise an evaluation of diamond tire and depend, at least in part, on pavilion depth;

means for providing a ~~numerical~~ grade of said diamond in the report, wherein said ~~numerical~~ grade is based, at least in part, on said list of proportion grades.

110. (Currently Amended) The system of claim 109, wherein said ~~numerical~~ grade is a fire grade.